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**Summaries of the**  
Life History of California Bat Species

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## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	<b>Family</b>
	Phyllostomidae	
<b>Name</b>	<u>Choeronycteris mexicana</u> (Mexican Long-tongued Bat)	

Distribution: Known to occur in San Diego County, California.

Habitat Characteristics: Found in a variety of arid habitats (Lower and Upper Sonoran life zones, from thorn scrub to tropical deciduous forests), outside California at elevations of 600-2,400 meters. Tends to favor desert canyons with riparian vegetation.

Ontogeny and Reproduction: One young per year, with birth occurring in June to July. Females congregate in maternity colonies. Colony size can be up to 40-50, but more commonly is a dozen or fewer.

Roost Sites: Selects primarily mines, caves and rock fissures for diurnal roosting. May also use buildings. Prefer sites near the entrance in twilight rather than total darkness. Sexes may roost together, but females separate from the males when young are born.

Food Habits: Food items limited to pollen and nectar.

Behavior: **Winter Status** - Does not hibernate. **Resident Status** - Not known if resident year-round.

Status: Rare in California.

Conservation/Management Issues: Recreational caving; mine reclamation; renewed mining; water impoundments; loss of food source. Behaviorally sensitive to disturbance at roost sites.

Relevant References: 2\_/, 3\_/, 16\_/, 20\_/, 34\_/, 36\_/

## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	<b>Family</b>
	Phyllostomidae	
<b>Name</b>	<u>Macrotus californicus</u> (California Leaf-nosed Bat)	

Distribution: Historically in California this species was distributed in the desert region across the southern portion of the state. Now it is confined primarily to the Colorado River Basin, with some records from desert mountain ranges in the eastern part of the state south of Death Valley.

Habitat Characteristics: Lower elevation desert scrub habitats. Roosts are located below 3,000 ft. elevation in proximity to desert wash areas.

Ontogeny and Reproduction: Ovulation, insemination, and fertilization occur in September-October. The embryo experiences delayed development until March. One young per year, with birth occurring in May to June. Females congregate in maternity roosts of 6 to >100. They frequently form clusters, each cluster being associated with an adult male. In the fall, males congregate at lek courtship sites in mines.

Roost Sites: Dependent on mines and caves for diurnal roosting. Mines used as winter roosts have internal temperatures >29°C, and are usually geothermally heated. More than one diurnal roost may be used during the year. Night roosting occurs in a variety of places, including buildings, cellars, porches, bridges, rock shelters, and mines. Summer colonies may range from 6 to several hundred individuals, with winter colonies containing 100 to over 1,000 individuals. Complete darkness is not required, and bats may roost within 10-30 meters of the entrance of a cave or other selected roost site.

Food Habits: Food items include grasshoppers, cicadas, moths, butterflies, dragonflies, beetles, and caterpillars. Foraging occurs close to vegetation or the ground and prey items are gleaned from these surfaces. Does not require drinking water, but gets moisture from prey items.

Behavior: **Winter Status** - Does not hibernate. both sexes congregate together in specific, warm winter roosts. Year-round activity. **Resident Status** - Year-round resident. **Other** - Emergence is usually 90-120 minutes after sunset. These bats are gregarious.

Status: Distribution is very limited in California. Range has contracted considerably in the past 50 years.

Conservation/Management Issues: Recreational caving; water impoundments; mine reclamation; renewed mining; loss of foraging habitat. Behaviorally sensitive to roost disturbance.

Relevant References: 1\_, 8\_, 16\_, 34\_, 46\_

## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	Family	Molossidae
Name	<u>Eumops perotis</u> (Western Mastiff Bat)		

Distribution: Known primarily from southern and central California, at low to mid-elevations. Isolated records in northern California. Very few records east of Sierra Crest. Primarily southern California and west side of Sierra Nevada. Have records of occurrences in the coast range.

Habitat Characteristics: Found in a variety of habitats, from desert scrub to chaparral to mixed conifer forest. Have been detected in montane meadows above 8,000 ft. and in giant sequoia habitat. Distribution is tied to availability of suitable roosting habitat and can sometimes be predicted based on presence of significant rock features (large granite or basalt formations).

Ontogeny and Reproduction: One young per year, with birth occurring from June to July. Females form maternity colonies, although males are sometimes present.

Roost Sites: Day roosts primarily crevices in cliff faces, and cracks in boulders, occasionally buildings. Generally roost in groups fewer than 100. Roosts typically 6 meters or more above the ground. Known to move to different roosts with the changing seasons. Males are sometimes found roosting with females at nursery sites.

Food Habits: Feeds on small insects, mainly member of the order Lepidoptera (moths). Foraging occurs in the open and ranges to high altitude (1,000 ft.). May travel more than 25 miles to reach feeding grounds. Detected most frequently over desert washes, grasslands, or meadows, but will also feed above forest canopy.

Behavior: **Winter Status** - Active all winter at lower elevations. **Resident Status** - Year-round resident.

Status: Serious declines in Los Angeles basin.

Conservation/Management Issues: Recreational climbing; pest control; loss of foraging habitat; water impediments; highway construction.

Relevant References: 3\_, 16\_, 21\_, 34\_, 38\_

## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	Family	Molossidae
Name	<u>Nyctinomops femorosaccus</u> (Pocketed Free-tailed Bat)		

Distribution: Found in the lower Colorado Desert and coastal areas of southern California.

Habitat Characteristics: Arid lowland areas, particularly desert canyons. Found only in lower and upper Sonoran life zones in California, associated with creosote bush and chaparral habitat.

Ontogeny and Reproduction: One young per year, with birth occurring from June to July.

Roost Sites: Day roosts primarily in crevices in cliff faces and boulders, although has been found in caves and buildings. Generally roosts in groups fewer than 100, consisting of adult females and their young; males roost separately.

Food Habits: Variety of insects, but moths and beetles predominate.

Behavior: **Winter Status** - Suspected not to hibernate. **Resident Status** - Year-round resident in California.

Status: Relatively rare.

Conservation/Management Issues: Recreational rock climbing; water impoundments; pest control exclusion; loss of foraging habitat.

Relevant References: 3\_, 13\_, 16\_, 23\_, 34\_



## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	Family	Molossidae
Name	<u>Nyctinomops macrotis</u> (Big Free-tailed Bat)		

Distribution: Scattered distribution throughout California, with the majority of records from San Diego County.

Habitat Characteristics: Associated primarily with rock country (canyon lands). Found in arroyo scrub desert and woodland habitats. In Arizona occurs in Ponderosa pine, Douglas fir, and desert scrub, but requires rocky cliffs with crevices and fissures for roosting.

Ontogeny and Reproduction: One young per year, with birth occurring in June to July. Foraging occurs in the open and ranges to high altitude.

Roost Sites: Day roosts primarily in crevices in cliff faces, but occasionally in buildings. Generally roosts in groups fewer than 100 individuals, consisting of adult females and their young; males roost separately.

Food Habits: Variety of insects but moths predominate. Foraging occurs in the open and ranges to high altitude.

Behavior: **Winter Status** - Suspected not to hibernate. **Resident Status** - May be a year-round resident in southern California.

Status: Few records in California.

Conservation/Management Issues: Recreational rock climbing; water impoundments; loss of foraging habitat.

**Relevant References**: 3\_/ 13\_/ 16\_/ 34\_/

## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	Family	Molossidae
Name	<u>Tadarida brasiliensis</u> (Brazilian Free-tailed Bat)		

Distribution: Found throughout California, ranging from low desert to high elevation.

Habitat Characteristics: Found mostly at lower elevations, this species has been known to occur from sea-level to over 10,000 ft. in the Sierra Nevada. Most common species in the Central Valley of California.

Ontogeny and Reproduction: Mating takes place in February-March, ovulation occurs around late March, gestation lasts about 77-84 days. One young per year, with birth occurring in June to July. Females form large maternity colonies; males segregate and may form smaller bachelor colonies.

Roost Sites: Roosts may vary considerably, from cliff faces, bridges, buildings, mines, and caves. Although colonies number in the millions in some areas, colonies in California are generally several hundred to several thousand.

Food Habits: Food items include a variety of insect species, but moths are the predominate item. Foraging occurs in the open and may range to high altitudes.

Behavior: **Winter Status** - Migrates away from colder portions of California and overwinters in areas with non-freezing temperatures. Migrants appear to be active in the winter range. **Resident Status** - Year-round resident in northern California and all warmer portions of the state.

Status: Population declines in California.

Conservation/Management Issues: Pesticide spraying; bridge replacement; water impoundments; mine reclamation; renewed mining; loss of foraging habitat; bridge replacement; pest control exclusions are probably primary.

Relevant References: 3\_, 16\_, 34\_, 49\_

## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	Family
	Vespertilionidae	
Name	<u>Antrozous pallidus</u>	(Pallid Bat)

Distribution: Most often found in low and middle elevation areas (< 6,000 ft) throughout California.

Habitat Characteristics: Found in a variety of habitats from scattered desert scrub, grassland, shrub land, woodland, and forests from sea level through mixed conifer. Associated with oak woodland, ponderosa pine, mixed conifer; redwood, and giant sequoia habitats in central and northern California.

Ontogeny and Reproduction: Mating takes place between late October and February. After a period of delayed fertilization, gestation occurs between April and June. 1-2 young are born per year, with two being most common. Nursery colonies may contain up to several hundred females, but generally fewer than 100. Maternity colonies are formed around April and usually consist of 20-100 individuals; males may roost in the nursery or separately. Young can fly well at 6 weeks of age, and are weaned by 7 weeks.

Roost Sites: Selects a variety of day roosts including rock outcrops, mines, caves, tree hollows, buildings, and bridges. Night roosts may vary, but commonly under bridges; but also in caves and mines. Intolerant of roosts in excess of 40°C.

Food Habit: Maneuvers well on the ground. Commonly feeds on large ground-dwelling arthropods such as Jerusalem crickets, beetles, and scorpions, but also include large moths, and grasshoppers. Forages at a height of 0.5 - 2.5 meters above the ground. Typically this species has two nightly foraging periods with an intervening roosting period.

Behavior: **Winter Status** - Hibernates but periodically arouses and actively forages and drinks throughout the winter. **Resident Status** - Year-round resident. **Other** - Highly social.

Status: Listed as a Mammal of Special Concern with the California Department of Fish and Game. The Pallid bat is very sensitive to roost site disturbance, and has suffered significantly due to pesticide use (primarily by the loss of edible insects) and from human development and removal of oak woodland habitats. California populations have declined in desert areas and in areas where oak woodland has been lost.

Conservation/Management Issues: Timber harvest; oak woodland conversion; pest control exclusions; mine reclamation; renewed mining; bridge replacement. Behaviorally sensitive to roost disturbance.

Relevant References: 16\_/, 18\_/, 29\_/, 30\_/, 34\_/, 37\_/

## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	<b>Family</b>
	Vespertilionidae	
<b>Name</b>	<u>Eptesicus fuscus</u>	(Big Brown Bat)

Distribution: Found throughout California from sea level to high elevation.

Habitat Characteristics: Variety of habitats

Ontogeny and Reproduction: Most breeding occurs in the fall; fertilization is delayed until spring, and 1 young is born in late May to June. Females form relatively small maternity colonies of 20 -300, at this time males roost alone or in small groups. Later in the summer both sexes will roost together.

Roost Sites: Day roosts include, but are not limited to mines, caves, buildings, bridges, and trees (e.g., ponderosa, aspen, oaks, and sycamores). Night roosts are more open settings in buildings, mines, and bridges. Roosts in groups up to several hundred. Roosts and hibernacula are found within cracks or crevices, or beneath rocks in mines and caves.

Food Habits: Feeds on a variety of insect taxa, but beetles and caddis flies are dominant in the diet. Feed over both water and land, in both forested and edge habitats. This bat forages repeatedly over the same route, emerging shortly after dusk and flying 8-10 meters above the ground and in open areas, near water sources, or among fairly open stands of trees. Feeding occurs throughout the night. Frequently shares its foraging area and roosts with other species, such as the Pallid , Mexican free-tailed, and Yuma bats.

Behavior: **Winter Status** - Known to hibernate for months, frequently at ambient temperatures below freezing. May arouse from hibernation and actively forage. Roosts and hibernacula are found within cracks or crevices, or beneath rocks in mines and caves. Winter and summer ranges are the same. **Resident Status** - Year-round resident. **Other** - emerge about sunset.

Status: Widespread and regionally common.

Conservation/Management Issues: Timber harvest; bridge replacement; building demolition; recreational caving; mine reclamation; renewed mining; pest control exclusion.

Relevant References: 5\_/, 6\_/, 16\_/, 27\_/, 34\_/, 50\_/

## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	<b>Family</b>
	Vespertilionidae	
<b>Name</b>	<u>Euderma maculatum</u> (Spotted Bat)	

Distribution: Scattered distribution throughout California.

Habitat Characteristics: Found in a wide variety of habitats, from low desert to high elevation coniferous forests. Closely associated with **rocky cliffs**.

Ontogeny and Reproduction: One young per year, with birth occurring in June to July.

Roost Sites: Day roosts primarily in crevices in cliff faces, but some indication that mines and caves may occasionally be used, primarily in winter. Likely roosts singly.

Food Habits: Eats a variety of insects, but moths are primary food items. In desert settings, foraging occurs in canyons, in the open, or over riparian vegetation. In montane habitats, animals forage over meadows, along forest edges, or in open coniferous woodland, typically remaining at or above treetop height, 10-30 meters above the ground.

Behavior: **Winter Status** - Hibernates but periodically arouses and actively forages and drinks throughout the winter. **Resident Status** - Year-round resident. **Other** - Usually solitary.

Status: Rare and patchy in occurrence.

Conservation/Management Issues: Recreational climbing; water impoundments; grazing/meadow management; mining and quarry operations; highway construction.

Relevant References: 33\_, 34\_, 48\_

## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	Family
	Vespertilionidae	
Name	<u>Lasionycteris noctivagans</u> (Silver-haired bat)	

Distribution: In California, distributed primarily in the northern portion of the state, or at higher elevations in the southern and coastal mountain ranges, confined primarily to forested habitats.

Habitat Characteristics: A forest-associated species. More common in mature and old growth forests. Found primarily at higher latitude or altitudes. Found in coniferous and mixed deciduous/coniferous forests. In California, one area where species is common, Douglas fir, ponderosa pine and black oak are the dominate tree species.

Ontogeny and Reproduction: One to two young per year, but generally two, with birth occurring in June to July. Forms small maternity colonies of several to about 75 individuals.

Roost Sites: Roosts almost exclusively in trees in summer. Maternity roosts are generally in woodpecker hollows. Uses multiple roosts sites and switches roosts frequently. Small group and single animals will roost under flaking bark. Winter roosts include hollow trees, rock crevices, mines, caves, and buildings. Also has been found hibernating under duff. One study showed that the two tree species most frequently used for roosting was Ponderosa pine (*Pinus ponderosa*) with a DBH range of 32' -74' , white pine (*Pinus monticola*) with a DBH range of 37-55. Other species include grand fir (*Abies grandis*) with a mean DBH of 54"; western larch (*Larix occidentalis*) with a mean DBH of 48"; lodgepole pine (*Pinus contorta*) with a mean DBH of 26"; Douglas fir (*Pseudotsuga menziesii*) with a mean DBH of 36"; and western red cedar (*Thuja plicata*) with a mean DBH of 52". In the same study all roost trees were in decay class 4 or greater (loss of some or all bark, extensive vertical cracks; some may have broken tops and cavities). All roosts were located in gaps in closed canopy patches. Snag height ranged from 6.9 to 61.5 m. Slope aspect varied considerably. All roost sites were >100 m upslope from a riparian area.

Food Habits: Food items include a variety of insects but moths are preferred. Foraging is generally in or near wooded areas, along edges of streams, or water bodies. Travels considerable distances (up to 15 Km) from roost sites to foraging areas.

Behavior: **Winter Status** - Migrates, but probably hibernates in winter range.. **Resident Status** - Year-round resident, although distribution shifts seasonally. Most commonly found in southern areas during the winter months.

Status: Locally common.

Conservation/Management Issues: Because it is an obligate tree-roosting species, it is at risk from timber harvest.

Relevant References: 4\_, 5\_, 10\_, 16\_, 22\_, 24\_, 31\_, 34\_

## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	<b>Family</b>
	Vespertilionidae	
<b>Name</b>	<u>Lasiurus blossevillii</u> (Western Red Bat)	

Distribution: Scattered throughout California s lower elevations.

Habitat Characteristics: Found in riparian and wooded habitats.

Ontogeny and Reproduction: One to five young per year, with an average of 2.3, with birth occurring in June. Individuals roost singly, colonies are not formed.

Roost Sites: Day roosts in trees, within the foliage. Found in fruit orchards and sycamore riparian in the Central Valey.

Food Habits: Food items consist of a variety of insects, taken opportunistically, apparently based on size rather than type. Foraging is generally high altitude over the tree canopy.

Behavior: **Winter Status** - Thought to be migratory. Has been shown to hibernate in duff. Known to winter in the San Francisco Bay Area and to the south. **Resident Status** - Year-round resident in California.

Status: Rare throughout California.

Conservation/Management Issues: Agricultural conversion of riparian zones; agricultural spraying; water impoundments; fire; predation, particularly by jays.

Relevant References: 12\_/, 16\_/, 19\_/, 34\_/, 40\_/

## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	<b>Family</b>
	Vespertilionidae	
<b>Name</b>	<u>Lasiurus cinereus</u> (Hoary Bat)	

Distribution: Found scattered throughout California. Found from sea level to 13,200 feet.

Habitat Characteristics: Tree-associated species. Found primarily in forested habitats.

Ontogeny and Reproduction: One to four young per year, but generally two, with birth occurring in May to June. Individuals roost singly, colonies are not formed.

Roost Sites: Day roosts in trees, within foliage, 3-12 m above the ground, in both coniferous and deciduous trees. May on rare occasions roost in caves, beneath ledges, in woodpecker holes, and in squirrel s nests.

Food Habits: Diet is primarily moths, but may also include dragonflies and beetles. Foraging occurs over the tree canopy, may forage long distance, up to 40 Km from its roost. . Will follow water courses for foraging and drinking. One study indicated that moths from the family Noctuidae is preferred.

Behavior: **Winter Status** - Migrates along California coast and east side of Sierra Nevada in spring and fall. Suspected to hibernate in the winter range. **Resident Status** - Year-round in California. Summer residents in California are primarily males. Adult females occur in the winter, but only rarely in the summer.

Status: Status is unknown.

Conservation/Management Issues: Timber harvest; pesticide spraying; loss of riparian habitat.

Relevant References: 12\_/, 16\_/, 19\_/, 34\_/, 41\_/



## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	<b>Family</b>
	Vespertilionidae	
<b>Name</b>	<u>Lasiurus xanthinus</u> (Southern Yellow Bat)	

Distribution: Found in fan palm oases and associated riparian habitats in the Colorado Desert of California, although recent captures indicate a spreading range into the Los Angeles Basin.

Habitat Characteristics: Palm oases and Lower and Upper Sonoran riparian habitats.

Ontogeny and Reproduction: One to two young per year (generally two), with birth occurring in June.

Roost Sites: Day roosts in trees, particularly in palms under shag.

Food Habits: Forages above the canopy on a variety of insect prey, predominantly moths.

Behavior: **Winter Status** - May be active year around in Southern California, except during coolest periods. **Resident Status** - Records for Southern California except December and January.

Status: Rare except in appropriate habitats.

Conservation/Management Issues: Fire management of palms (removing the shag that shelters the bats). Destruction of riparian habitats and palm oases for agriculture and development.

Relevant References: 16\_/, 21\_/, 28\_/, 34\_/

## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	<b>Family</b>
	Vespertilionidae	
<b>Name</b>	<u>Myotis californicus</u>	(California myotis)

Distribution: Found throughout California typically at elevations < 6,000 feet, although occasionally found at higher altitude.

Habitat Characteristics: Variety of habitats from lower Sonoran desert scrub to forests.

Ontogeny and Reproduction:

Mates in the fall, and a single young is born between late May and June. Females often roost singly, but may form small maternity colonies, usually fewer than 100 individuals.

Roost Sites: Wide variety of day roosts including mines, caves, buildings, rock crevices, hollow trees, and under exfoliating bark. Crevice roosting. Night roosts in a wider variation of structures. Generally roost singly or in small groups.

Food Habits: Feed on a variety of insects, such as moths, flies, beetles, and spiders. Often fly at canopy height. Most active during early evening, with foraging beginning shortly after sunset. Hunts and feeds rapidly, returns to night roost to rest, then resumes hunting. Foraging usually occurs above 3 meters, at a short distance from the roost.

Behavior: **Winter Status** - Known to hibernate, but may be active on warmer days for brief periods. **Resident Status** - Year-round resident.

Status: Widespread and regionally common.

Conservation/Management Issues: Closure of mines for reclamation and renewed mining. Pesticide spraying.

Relevant References: 26\_/, 34\_/, 42\_/

## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	<b>Family</b>
	Vespertilionidae	
<b>Name</b>	<u>Myotis ciliolabrum</u> (Small-footed myotis)	

Distribution: Found throughout California, primarily at the middle and higher elevations (>6,000 ft), although also found at low elevations in the California desert.

Habitat Characteristics: Inhabits a variety of habitats including desert scrub, grasslands, oak and pinyon juniper woodlands into pine forests.

Ontogeny and Reproduction: One young per year with birth occurring in May to June. Females may form small maternity colonies, generally fewer than 30 individuals, although they have been know to have more than 50 individuals.

Roost Sites: Roosts have been found in cavities, such as mines and trees. Roosting preferences expected to be similar to those of *Myotis californicus*.

Food Habits: Food items include small moths, flies, ants, and beetles. Foraging occurs in the open.

Behavior: **Winter Status** - Hibernates. **Resident Status** - Year-round resident.

Status: Widespread and regionally common.

Conservation/Management Issues: Mine reclamation; renewed mining; water impoundments; timber harvest.

Relevant References: 3\_/, 21\_/, 34\_/

## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	<b>Family</b>
	Vespertilionidae	
<b>Name</b>	<u>Myotis evotis</u> (Long-eared myotis)	

Distribution: Found throughout California, higher elevation forests, mixed coniferous/hardwood forests, in high desert, and near sea level with appropriate habitat. One of the most abundant species in giant sequoia habitat.

Habitat Characteristics: Primarily a forest associated species. Found in mixed hardwood/conifer forest and montane conifer forest in northern California, in pinyon-juniper, mesquite scrub, and pine/oak woodland in southern California.

Ontogeny and Reproduction: One young per year with birth occurring in June to July. Females may form small maternity colonies, with generally fewer than 40 individuals.

Roost Sites: Caves, mines, trees, crevices, buildings, and bridges.

Food Habits: Diet includes moths, small beetles, and flies. Foraging occurs near vegetation and the ground. Appears to have a flexible foraging strategy, catching insects by both substrate gleaning and aerial pursuit. Forages along rivers and streams, over ponds, and within cluttered forest environment. Night roost use of caves and mines may involve feeding within the structure gleaning moths from the rock walls.

Behavior: **Winter Status** - Presumed to be non-migratory and to hibernate locally. Hibernating individuals have been found in caves in northern California. **Resident Status** - Year-round resident.

Status: Widely distributed in California, but uncommon almost everywhere. Status not well understood.

Conservation/Management Issues: Timber harvest; recreational caving; mine reclamation; renewed mining; highway projects; bridge replacement; building demolition and pest control.

Relevant References: 11\_/, 32\_/, 34\_/

## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	<b>Family</b>
	Vespertilionidae	
<b>Name</b>	<u>Myotis lucifugus</u> (Little Brown Myotis)	

Distribution: Found through the northern portions California and as far south as Big Bear Lake in San Bernardino County.

Habitat Characteristics: Found primarily at higher elevations and higher latitudes, often associated with coniferous forest. Needs water nearby.

Ontogeny and Reproduction: One young per year with birth occurring in May to June. Large maternity roosts (100 to several thousand) are formed comprised of adult females. Males roost singly or in small groups. Hibernating groups contain both sexes.

Roost Sites: Known primarily from buildings--only recently found in trees. Day roosts in hollow trees, rock outcrops, buildings, and occasionally mines and caves. One of the species most commonly found in human structures. Night roosts may be same structures used for day roost, but in more open locations. Hibernacula elsewhere are generally mines or caves. Often found in same roost sites with *Myotis yumanensis* in northern California.

Food Habits: Feeds on small aquatic insects, such as caddis flies, midges, and mayflies. Foraging occurs in primarily open areas among vegetation, along water margins, and sometimes about 1 m above water surface. When young begin to fly, however, adults move to more cluttered environment, and leave open foraging areas to the juveniles.

Behavior: **Winter Status** - hibernates, but no hibernating colonies have been found in California. **Resident Status** - Probably year-round resident.

Status: Regionally common.

Conservation/Management Issues: Timber harvest; pesticide spraying; building demolition; pest control exclusion; mine reclamation; renewed mining.

Relevant References: 14\_/, 16\_/, 21\_/, 34\_/

## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	<b>Family</b>
	Vespertilionidae	
<b>Name</b>	<u>Myotis occultus</u> (Arizona Myotis)	

Distribution: In California, confined to the Colorado River between the Nevada and Mexico borders.

Habitat Characteristics: Associated with low desert where a permanent water source occurs. Vegetation association includes cottonwoods, sycamores, and willows.

Ontogeny and Reproduction: One young per year with birth occurring in May to June. Large maternity roosts (up to 800 adult females). Males roost singly or in small groups. Hibernating groups contain both sexes.

Roost Sites: Day roosts in buildings, mines, bridges, trees, and caves. Hibernacula elsewhere are generally mines or caves. Historic California records were in mines and a bridge.

Food Habits: Information on diet is limited, although known to forage close to water and riparian vegetation.

Behavior: **Winter Status** - Hibernates but no winter individuals have been found in California. **Resident Status** - Summer resident. There are no known wintering location, nor current roosts known in California.

Status: Last seen in California in 1945. Original bridge roost demolished.

Conservation/Management Issues: Loss of riparian habitat; bridge replacement; renewed mining and closure for hazard abatement.

Relevant References: 17\_/, 21\_/, 34\_/

## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	<b>Family</b>
	Vespertilionidae	
<b>Name</b>	<u>Myotis thysanodes</u> (Fringed Myotis)	

Distribution: Found from coastal region to at least 6,400 ft in Sierra Nevadas in California.

Habitat Characteristics: Varies from low desert scrub to high elevation coniferous forest. In California, has been found in mixed deciduous/coniferous forest, in both redwood and giant sequoia groves, and in Joshua tree woodland.

Ontogeny and Reproduction: One young per year, with birth occurring in May to June. Maternity roosts are comprised of adult females and may include several hundred individuals, although most known California roosts are small (fewer than 40 females). One roost in southern California has more than 400. Males roost individually. Hibernating groups contain both sexes.

Roost Sites: Day and night roosts in mines, caves, trees, and buildings. The majority of roosts documented in California have been in buildings or mines. Has been known to roost in tree hollows, particularly large conifer snags in Oregon and Arizona, and in rock crevices in cliff faces in southern California. Hibernacula are generally in mines or caves.

Food Habits: A variety of small beetles is preferred, but includes a variety of other taxa including moths. Foraging occurs in and among vegetation, with some gleaning activity. Foraging also occurs along forest edges and over the forest canopy.

Behavior: **Winter Status** - Hibernates, but capable of periodic winter activity. **Resident Status** - Year-round resident.

Status: Widely distributed but rare. Few records for California. Very sensitive to roost disturbance.

Conservation/Management Issues: Recreational caving; mine reclamation; renewed mining; building demolition; pest control; timber harvest; bridge replacement.

Relevant References: 11\_, 32\_, 34\_, 35\_, 44\_

## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	<b>Family</b>
	Vespertilionidae	
<b>Name</b>	<u>Myotis velifer</u> (Cave Myotis)	

Distribution: Restricted to the lower Colorado River valley in California.

Habitat Characteristics: Primarily lower elevations, in arid habitat dominated by creosote bush, palo verde, cactus, and desert riparian.

Ontogeny and Reproduction: Mating takes place in fall (Oct.), ovulation in April, then one young is born per year with birth occurring in June to July. Forms large maternity colonies numbering in the tens of thousands. Males roost groups of usually fewer than 100 individuals. Hibernating groups contain both sexes.

Roost Sites: Day roosts in caves and mines (occasionally buildings and bridges). Tolerates summer roost temperatures as high as 37°C. Night roosts may be same structure used for day roost, but locations nearest the entrance are preferred. Has been found in swallow nests. Hibernacula are generally in mines or caves.

Food Habits: Foraging occurs in open areas near the edge or over vegetation. In California, forages primarily over floodplain of Colorado River. Food items include moths and beetles.

Behavior: **Winter Status** - Hibernates. **Resident Status** - Summer resident in California.

Status: Declining numbers in California.

Conservation/Management Issues: Loss of riparian habitat and intense agricultural conversion along the Colorado River. Mine reclamation and renewed mining could pose threats.

Relevant References: 15\_, 34\_, 43\_, 46\_



## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	<b>Family</b>
	Vespertilionidae	
<b>Name</b>	<u>Myotis volans</u> (Long-legged myotis)	

Distribution: Found throughout California. Has been found from coast to high elevation in Sierra Nevada and White Mountains in California. Absent from low desert.

Habitat Characteristics: Found throughout California, in pinyon-juniper, Joshua tree woodland, montane coniferous forest habitats, and in forested habitats along the coast. Most abundant species at high elevation in White Mountains in California. Found in pine/oak woodland in the Laguna Mountains of San Diego County. Also found in unforested desert settings.

Ontogeny and Reproduction: One young per year with birth occurring in June to July. Maternity colonies of up to 200-500 individuals.

Roost Sites: Day roosts primarily in hollow trees, particularly large diameter snags or live trees with lightning scars. Also uses rock crevices, mines, and buildings. Caves and mines may be used for night roosts. Hibernacula are generally in mines or caves.

Food Habits: Feeds primarily on moths, but also feeds on other insect taxa, including beetles, flies, and termites. Foraging occurs in open areas, often at canopy height.

Behavior: **Winter Status** - Hibernates but has the capability of winter activity. It is suspected that there are elevational and latitudinal movements between summer and winter roosts. Transient colonies in the spring on the east side of the Sierra Nevada. **Resident Status** - Probably year-round resident.

Status: Not well known.

Conservation/Management Issues: Timber harvest; aerial pesticide spraying; recreational caving; mine reclamation; renewed mining; building demolition and pest control.

Relevant References: 16\_/, 21\_/, 34\_/, 47\_/

## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	<b>Family</b>
	Vespertilionidae	
<b>Name</b>	<u>Myotis yumanensis</u> (Yuma Myotis)	

Distribution: Found throughout California, from lower elevations up to 5,000 feet in elevation.

Habitat Characteristics: Variety of habitats from the coast to mid-elevation. Associated with most low elevation reservoirs in California. May be referred to as the building bat, but it is also found in heavily forested settings.

Ontogeny and Reproduction: One young per year, with birth occurring in June to July. Maternity colonies can be large, up to several thousand individuals), and contain only adult females and their young. Males roost singly or in small groups..

Roost Sites: Day roosts in buildings, trees, mines, caves, bridges, and rock crevices. Night roosts usually associated with buildings, bridges, or other man-made structures. Colonies found inside hollow redwoods in coastal California.

Food Habits: Feeds primarily on emergent aquatic insects, such as caddis flies and midges. Foraging occurs directly over the surface of open water and above vegetation. Feed over relatively still water, such as ponds, reservoirs, or pools in streams and rivers.

Behavior: **Winter Status** - Hibernates. **Resident Status** - Year-round resident. **Other** - Seems closely associated with water.

Status: Locally common.

Conservation/Management Issues: Timber harvest; renewed mining; building demolition; pest control exclusions; bridge replacement.

Relevant References: 7\_, 34\_, 44\_

## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	<b>Family</b>
	Vespertilionidae	
<b>Name</b>	<u>Pipistrellus hesperus</u> (Western Pipistrelle)	

Distribution: Concentrated in desert areas, but found as far north as Shasta County.

Habitat Characteristics: lower and Upper Sonoran desert and coastal sage scrub, usually in association with rock features such as granite boulders and canyons.

Ontogeny and Reproduction: One or two young per year, with birth occurring in June. Females may form small maternity colonies, but usually fewer than 12 individuals, including both females and young.

Roost Sites: Day roosts primarily in rock crevices, but may include mines, caves, or rarely buildings. Generally roost singly or in small groups.

Food Habits: Primarily small moths, leafhoppers, mosquitoes, and flying ants. Foraging is characterized by flow, erratic flight patterns and usually occurs in the open.

Behavior: **Winter Status** - Hibernates, but may have periodic activity throughout the winter. **Resident Status** - Year-round resident. **Other** - not gregarious.

Status: Common in appropriate habitat.

Conservation/Management Issues: Destruction of roosting and foraging habitat with development and mine closure and reclamation. Water impoundments may flood roost sites.

Relevant References: 21\_, 34\_, 45\_

## GENERAL LIFE HISTORY

### CLASSIFICATION

Order	Chiroptera	<b>Family</b>
	Vespertilionidae	
<b>Name</b>	<u>Corynorhinus townsendii</u> (Townsend's Big-eared Bat)	

Distribution: Found throughout California, from low desert to mid-elevation montane habitats.

Habitat Characteristics: Highly associated with mines and caves. Desert scrub, mixed conifer, and pinon-juniper or pine forest.

Ontogeny and Reproduction: One young per year, with birth occurring in May to July, depending on latitude and local climate. Females form maternity colonies; males roost individually. Historically, maternity colonies typically contained several hundred females. Mating occurs in the winter roost.

Roost Sites: A cavern dwelling species that uses mines, caves, and buildings. One of the species most dependent on mines and caves. Buildings must offer cave-like spaces in order to be suitable. Will night roost in more open settings, including under bridges. In the summer males roost alone or in small groups (6 individuals), nursery colonies may contain 17-40 adult females, and winter hibernacula may have 1-60 individuals.

Food Habits: Food items are primarily small moths. Foraging occurs near vegetation and other surfaces and prey is probably gleaned from these surfaces. In California, shown to forage preferentially in association with native vegetation.

**Behavior**: Winter Status - Hibernates in mixed sex aggregations of 100-500 individuals. Periodically arouses, moves to alternate roosts. Actively forages and drinks throughout the winter. Hibernation prolonged in colder areas, and intermittent where climate is predominantly non-freezing.

**Resident Status** - year-round resident. **Other** - Gregarious.

Status: Serious population declines in past forty years in parts of California.

Conservation/Management Issues: Highly sensitive to disturbance at roost sites. Mine reclamation; renewed mining; water impoundments; recreational caving; loss of building roosts; bridge replacement. Avoidance of human disturbance is essential.

**Relevant References**: 9\_, 25\_, 34\_, 39\_

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